

Remarks

By the present amendment and response, Applicants amended paragraph numbers [0002] and [0036] of background and detailed description, respectively, to correct minor errors; have amended claims 1, 15, 26-30, and 40, have canceled claims 53-59, and have added new claims 60 and 61. Consequently, claims 1-52 and 60-61 are pending in the present application with claims 1, 30, and 44 being independent claims. Claims 44-52 were already deemed to be allowable (Office Action, page 10). Remarks addressing the 35 U.S.C. § 102 and § 103 rejections contained in the Office Action mailed March 24, 2004 are set forth in turn below.

I. Rejections under 35 U.S.C. § 102(e)

Claims 1-17, 22-43, and 53-59 were rejected under 35 U.S.C. § 102(e) as being allegedly unpatentable over U.S. Patent No. 6,536,477 to O'Connor et al. Since claims 53-59 have been cancelled, their rejection is now moot. O'Connor et al. discloses a rectangular pipette tip coupling block 100 having a conical internal bore 101 adapted to receive a pipette tip 102. (See O'Connor et al., col. 8 lines 52-67 & Figs. 4A-4B). A flat microfluidic coupler 20c connects to the substantially planar lower surface of the pipette tip coupling block 100 to permit fluid communication between the coupling block 100 and an external microfluidic division device. (See, e.g., O'Connor et al., Figs. 4A-4B & col. 8, lines 52-67).

A. Independent (Amended) Claims 1 and 30 Are Not Anticipated By O'Connor et al.

With regard to independent claims 1 and 30, both have been amended herewith to clarify that the aperture-defining nonplanar wall to which the microfluidic device is attached is **external** to the vessel. This is in sharp contrast to the disclosure of O'Connor et al., which illustrates only a single example of a "vessel," namely, the above-mentioned pipette tip coupling block 100. Applicants agree with the Examiner that the substantially nonplanar wall of the pipette tip coupling block 100 comprises "a conical **interior** surface wall, which is shaped to

receive and fit a standard pipette tip 102". (Office Action, page 2). As illustrated in O'Connor et al. FIGS. 4A-4B, the mating (e.g., lower) surface of the pipette tip coupling block 100 that contacts the microfluidic coupler 20c is flat or planar. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1453, 221 USPQ 481, 485 (Fed. Cir. 1984) (*citing* *Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983) (emphasis added)). Here, O'Connor et al. fails to show a microfluidic device attached along an aperture-defining non-planar external surface of a vessel. As a result, O'Connor et al. cannot anticipate amended claims 1 and 30, and withdrawal of the section 102(e) rejections thereof is respectfully requested.

B. Dependent Claim 2-17 And 22-43 Are Not Anticipated By O'Connor et al.

Since claims 2-17 and 22-43 depend from amended claims 1 and 30, respectively, and therefore incorporate all of the limitations of amended claims 1 and 30, none of claims 2-17 and 22-43 can be anticipated either by O'Connor et al. Additional novel features, however, are present in certain of claims 2-29 and 31-43 that distinguish O'Connor et al.

In one example, amended claims 15 and 40 require a vessel defining a first aperture and a second aperture in at least one external wall of the vessel, and a microfluidic device including a first port and a second port co-located with the first aperture and the second aperture, respectively. Contrary to the Examiner's assertion (e.g., Office Action, page 5), nothing in O'Connor et al. discloses this combination of features.

In another example, claims 16 and 42 require that the vessel (to which the microfluidic device is attached along a substantially nonplanar external wall thereof) is selected from the group consisting of: a pipe, a tube, a vial, and a syringe. The Examiner asserts that, with regard to claim 16, "the vessel [of O'Connor et al.] may comprise a syringe pump or a pipette tip (102), which is like a pipe or tube". (Office Action, page 5, citing O'Connor et al., col. 7, lines

36-53). The cited passage of O'Connor et al. (col. 7, lines 36-53) states that "a sample plug is injected at the inlet port 40 using a syringe pump at a constant flow rate". While a syringe pump is used to provide the motive force for fluid supply, however, there is no indication from O'Connor et al. that a microfluidic device is attached to a substantially non-planar external wall of such a syringe pump. Rather, the illustration of FIGS. 4A-4B and related text of O'Connor et al. suggests that intermediate coupling means such as a coupling block may be used.

In another example, claims 17 and 43 require that the vessel (to which the microfluidic device is attached along a substantially nonplanar external wall thereof) is cylindrical and includes a moveable piston sealingly engaged therein. The Examiner asserts that, with regard to claim 17, "the system [of O'Connor et al.] incorporates the use of a syringe pump, which is well-known in the art to be cylindrical and comprise a piston for injecting fluid." (Office Action, page 5, citing O'Connor et al., col. 7, lines 37-53; col. 8, lines 32-67 & col. 9, lines 1-12). As was the case with claim 16, while O'Connor et al. teaches the use of a syringe pump to provide the motive force for fluid supply, there is no indication from O'Connor et al. that a microfluidic device is attached to a substantially non-planar external wall of such a syringe pump.

Based on the foregoing, withdrawal of the section 102(e) rejections of claims 1-17 and 22-43 is respectfully requested.

II. Rejections under 35 U.S.C. § 103(a)

Claims 18-21 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over O'Connor et al. (U.S. 6,536,477). In response to this rejection, Applicant wishes to remind the Examiner of the existence of 35 U.S.C. 103(c) (as amended November 29, 1999), which reads as follows:

Subject matter developed by another person, which qualifies as prior art only under only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made,

owned by the same person or subject to an obligation of assignment to the same person. (Emphasis added.)

Section 103(c) is cogently explained in MPEP 706.02(k), as follows:

Effective November 29, 1999, subject matter which was prior art under former 35 U.S.C. 103 via 35 U.S.C. 102(e) is now disqualified as prior art against the claimed invention if that subject matter and the claimed invention “were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.” This change to 35 U.S.C. 103(c) applies to all utility, design and plant patent applications filed on or after November 29, 1999 (Emphasis added.)

The same sentiment is echoed in 37 C.F.R. § 1.106(c)(4), which states:

Subject matter which is developed by another person which qualifies as prior art only under 35 U.S.C. 102(e), (f) or (g) may be used as prior art under 35 U.S.C. 103 against a claimed invention unless the entire rights to the subject matter and the claimed invention were commonly owned by the same person or organization or subject to an obligation of assignment to the same person or organization at the time the claimed invention was made. (Emphasis added.)

As mentioned previously, the Examiner rejected several claims in the present application (e.g., claims 1-17, 22-43, and 53-59) under 35 U.S.C. § 102(e) as being allegedly anticipated by O'Connor et al. Applicants assume that the § 103(a) of claim 18-21 is similarly premised on the availability of O'Connor et al. as a reference under § 102(e). The present application was filed on May 23, 2001, well after the November 29, 1999 threshold for applying the present version of 35 U.S.C. § 102(e).

Attention is hereby drawn to the fact that both the present application and O'Connor et al. were, at the time the inventions were made, owned by Nanostream, Inc. and subject to an obligation of assignment to Nanostream, Inc. See Declaration of Stephen D. O'Connor In Support of Response to Official Action Mailed March 24, 2004 at ¶¶ 2-4. Thus, based on Applicant's reading of section 103(c), it seems that O'Connor et al. is disqualified as prior art against the claimed invention. As a result, withdrawal of the section 103(a) rejections of claims 18-21 is respectfully requested.

III. New Claims


Dependent claims 60 and 61 have been added to claim further salient features of the invention. No new matter has been added.

Conclusion

By virtue of the amendment and arguments stated herein, Applicants believe that all pending claims 1-52 and 60-61 are in good condition for allowance, and respectfully request allowance thereof. No new matter has been added. Consideration of the enclosed Information Disclosure Statement is also requested. If, for some reason, a notice of allowance cannot be envisaged after consideration of the present Amendment, a telephone call with the undersigned at (626) 351-8200 ext. 6503 to discuss any deficiencies would be earnestly appreciated.

Respectfully submitted,

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